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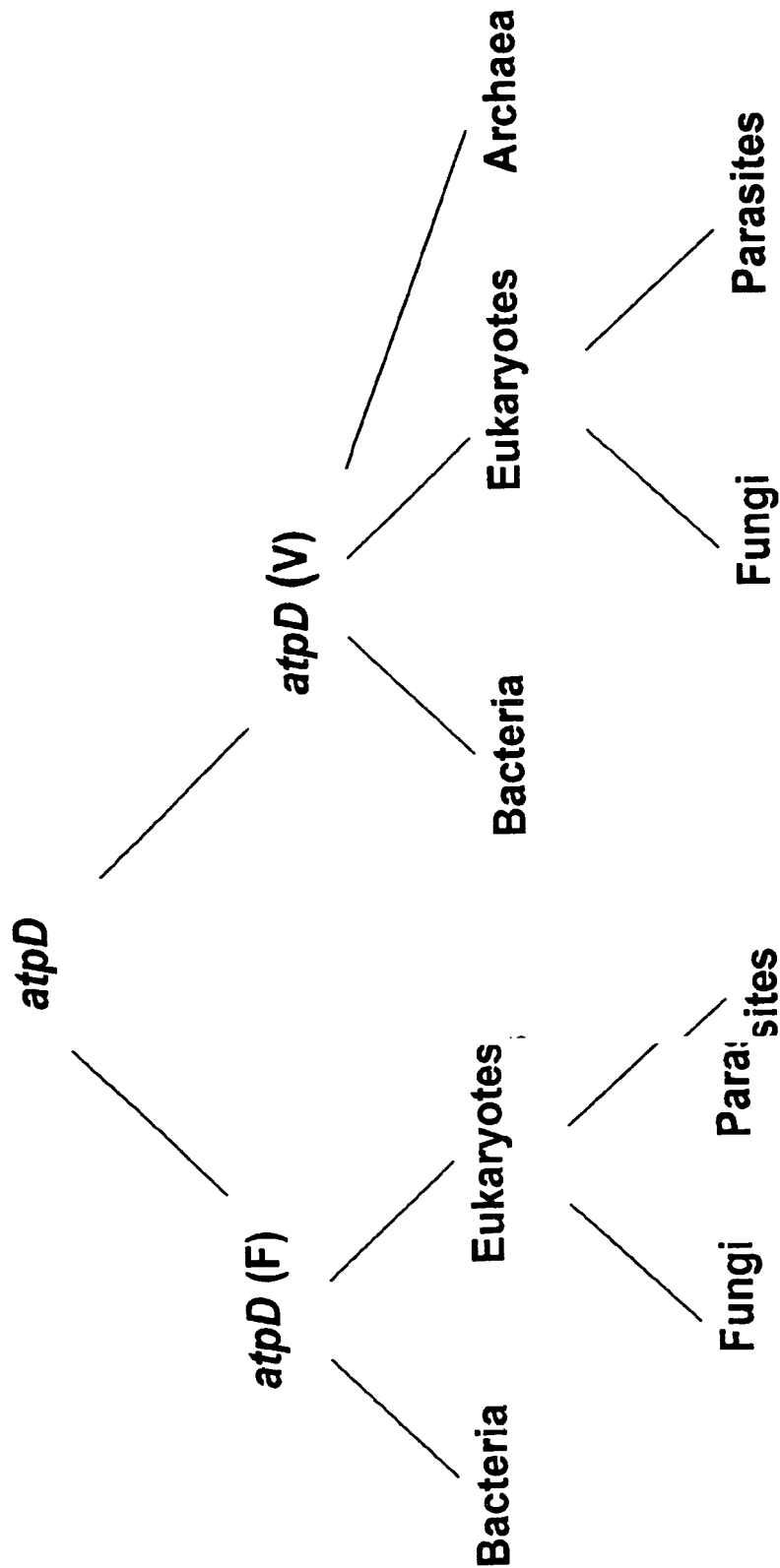


FIG. 1

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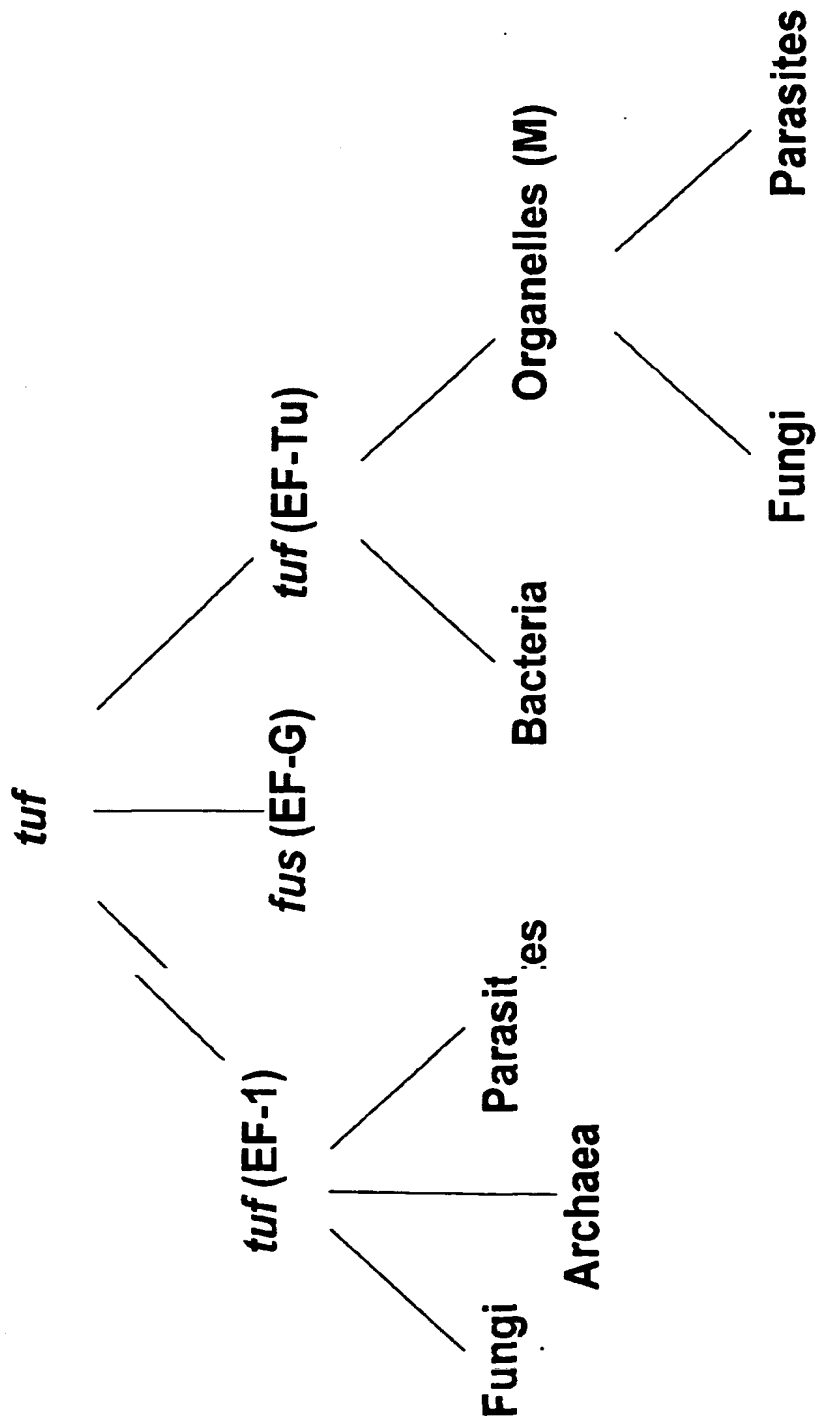
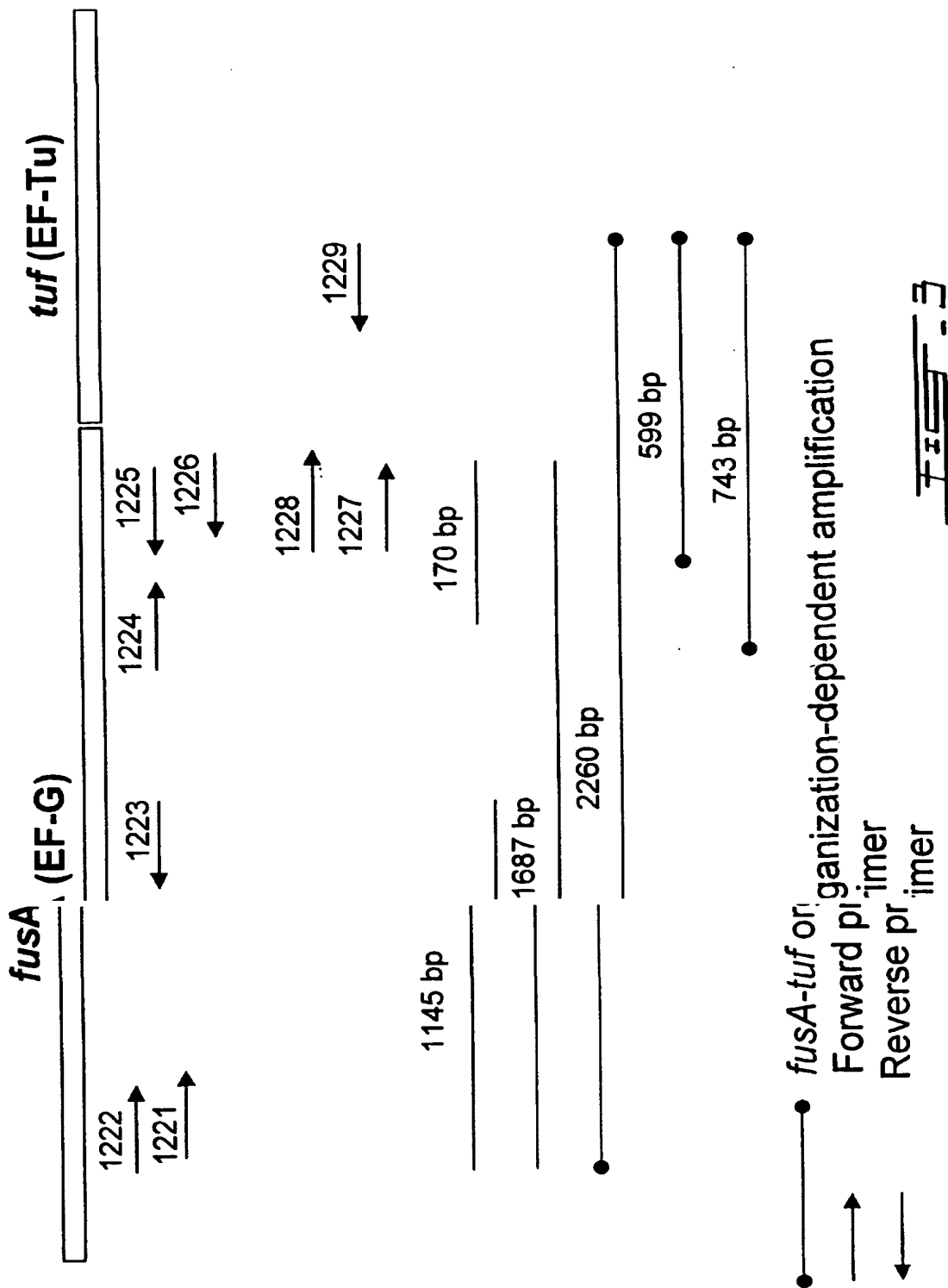


FIG. 2

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S. aureus	REHLLSRNVGVPYI	120	130	140	150	160	170	180	190	200
S. epidermidis	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. durans (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. hirae (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. mundtii (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. faecium (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. cecorum	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. columbae	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. cassel. flavus (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. gallinarum (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. faecalis	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. avium (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. raffinosus (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. dispar (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. malodoratus (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. pseudoavium (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. sulfureus	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. saccharolyticus	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. solitarius	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI

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<i>L. monocytogenes</i>	REHILLSRQVGPYIIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GEADWEAKIDELMEAVDSYIP
<i>E. cassel. flavus (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. gallinarum (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. durans (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. faecium (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. hirae (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. mundtii (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. avium (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. pseudoavium (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. malodoratus (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. raffinosus (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. dispar (B)</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>S. pneumoniae</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>S. suis</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>S. pyogenes</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>S. mutans</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>L. lactis</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>T. aquaticus</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. coli</i>	REHILLSRQVGVKHLIV	FINKCDVDDDEELLELEVETROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP

C f → D g E F

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L. monocytogenes
E. cassel. flavus (B)
E. gallinarum (B)
E. durans (B)
E. faecium (B)
E. hirae (B)
E. mundtii (B)
E. avium (B)
E. pseudoavium (B)
E. malodoratus (B)
E. raffinosus (B)
E. dispar (B)
S. pneumoniae
S. suis
S. pyogenes
S. mutans
L. lactis
T. aquaticus
E. coli

$\Rightarrow a2 \Rightarrow b2 \Rightarrow c2 \Rightarrow d2 \Rightarrow e2 \Rightarrow f2 \Rightarrow g2 \Rightarrow h2 \Rightarrow i2 \Rightarrow j2 \Rightarrow k2$

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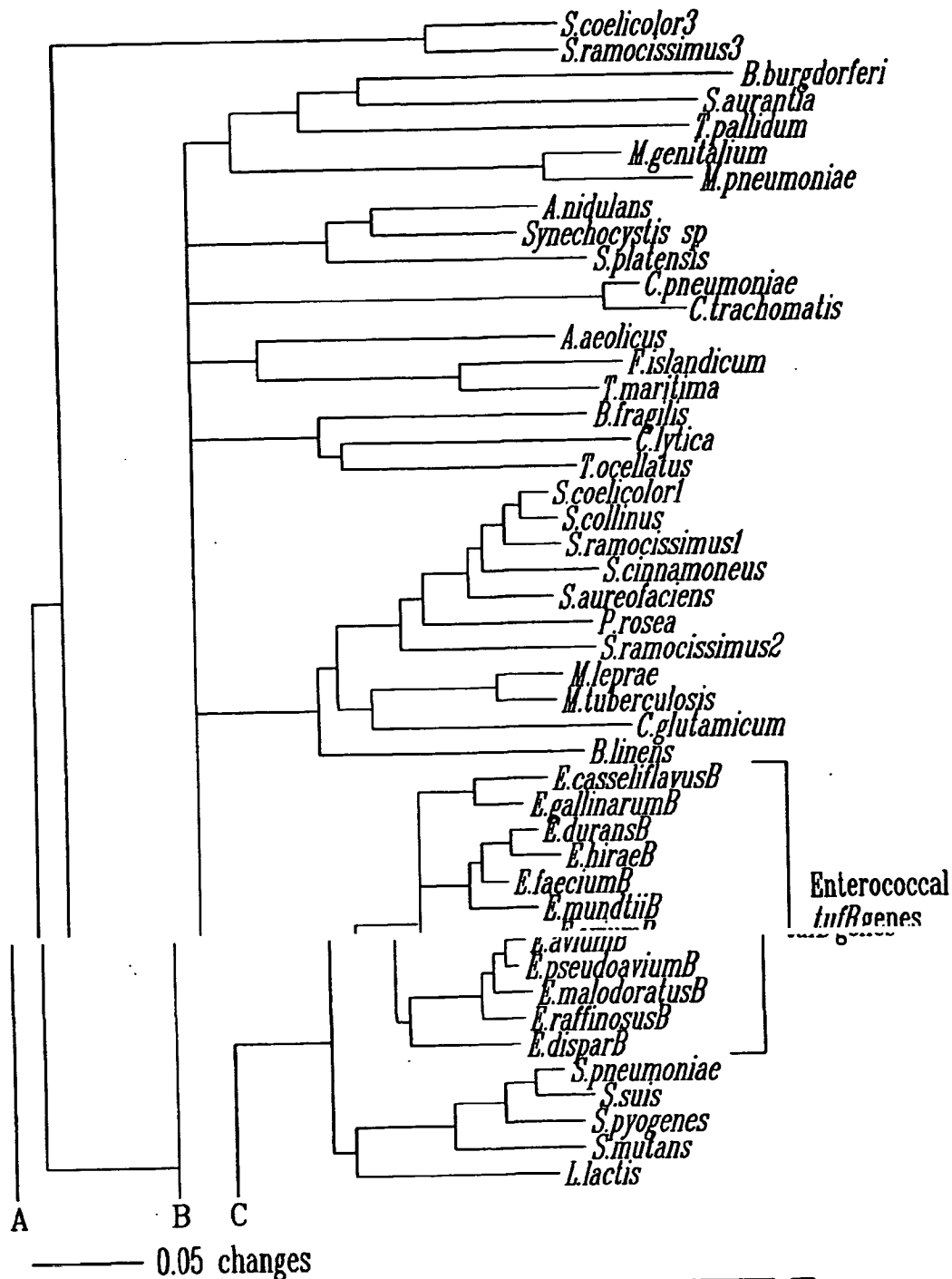
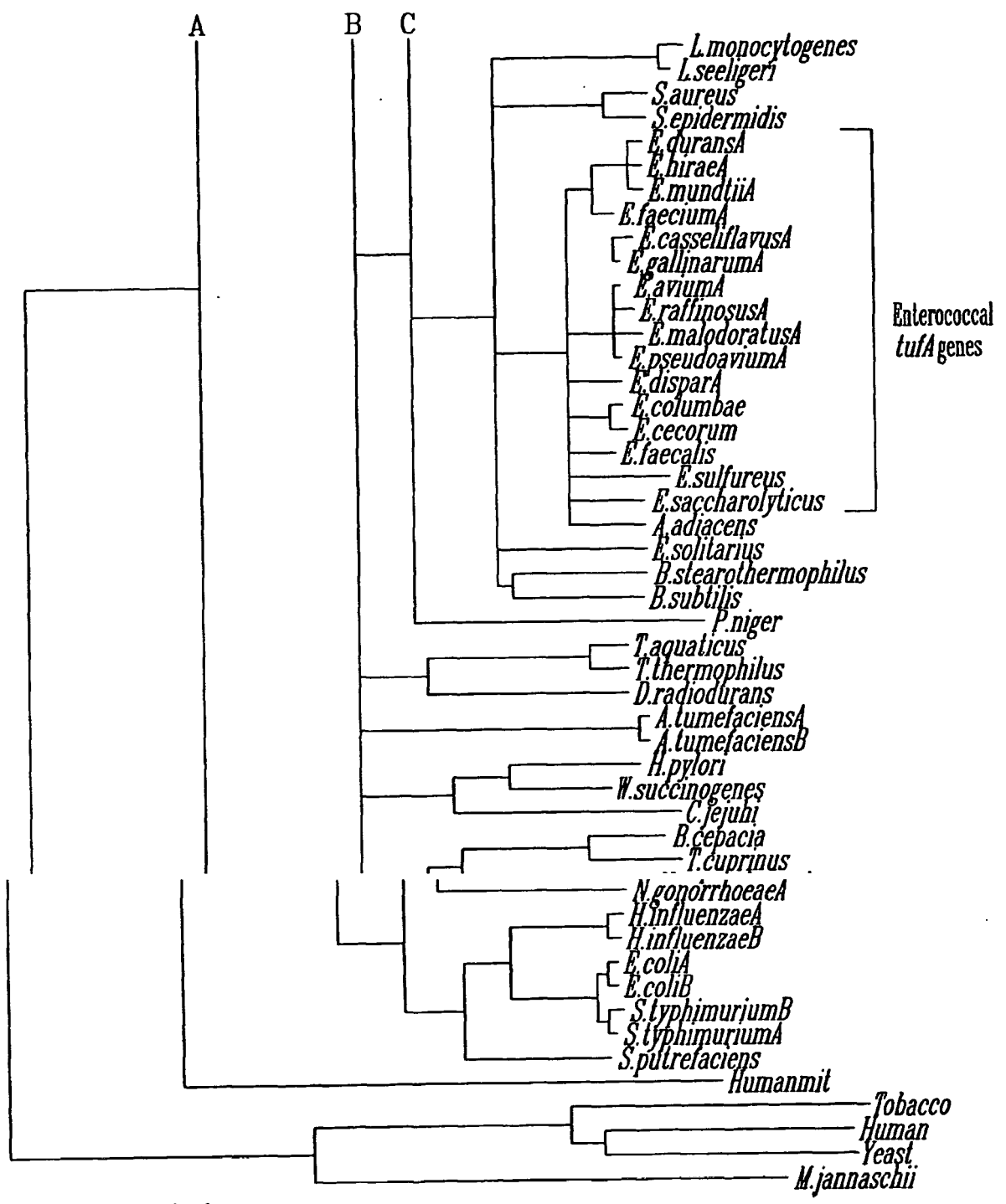


FIG. 5a

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0.05 changes

FIG. 5b

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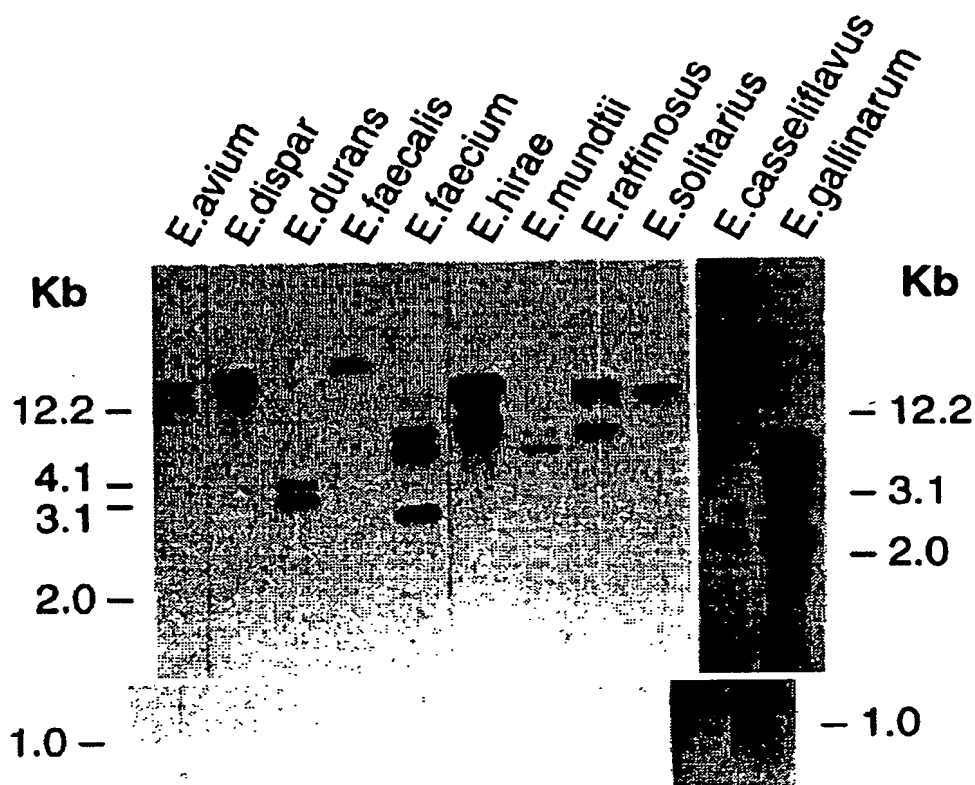


FIG. 6

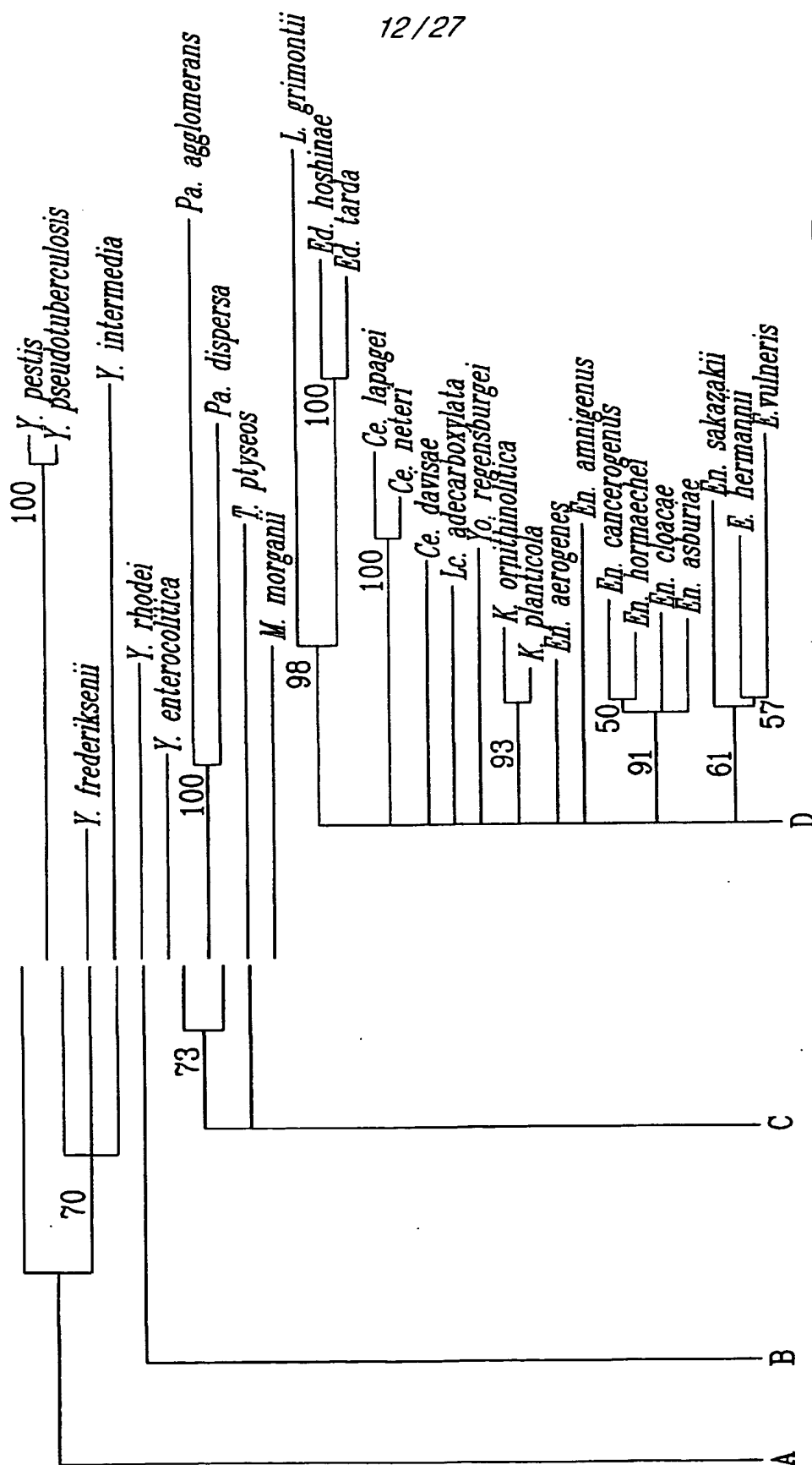
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	301	311	321	331
E. coli	GAGATCGGT	AAGAAGACCG	TTGGG	CGATTCACCG
E. agglomerans	GACATCGGT	AAGAAGACCG	TTGGG	CGATCCACCG
P. agglomerans	GAGCTGAAA	AAGAAGATGG	CAGCGCAGTA	CTATTCACCG
P. dispersa	GACCTGAAA	AAGAAGACCG	CAGCGCTGTA	CTATTCATCG
T. ptyseos	GACCTGAAG	ACGAAGATGG	TAGCAATGTT	CTATTCACCG
E. coli	~I~G~E~	E~E~R~W~A~	I~H~R~
E. agglomerans	~I~G~E~	E~E~R~W~A~	I~H~R~
P. agglomerans	~L~K~E~	E~D~G~S~A~	V~E~ ~I~A~S~	I~H~R~
P. dispersa	~L~K~E~	E~D~G~S~A~	V~E~ ~V~S~S~	I~H~R~
T. ptyseos	~L~K~N~	E~D~G~S~N~	V~E~ ~V~N~S~	I~H~R~

FIG. 7

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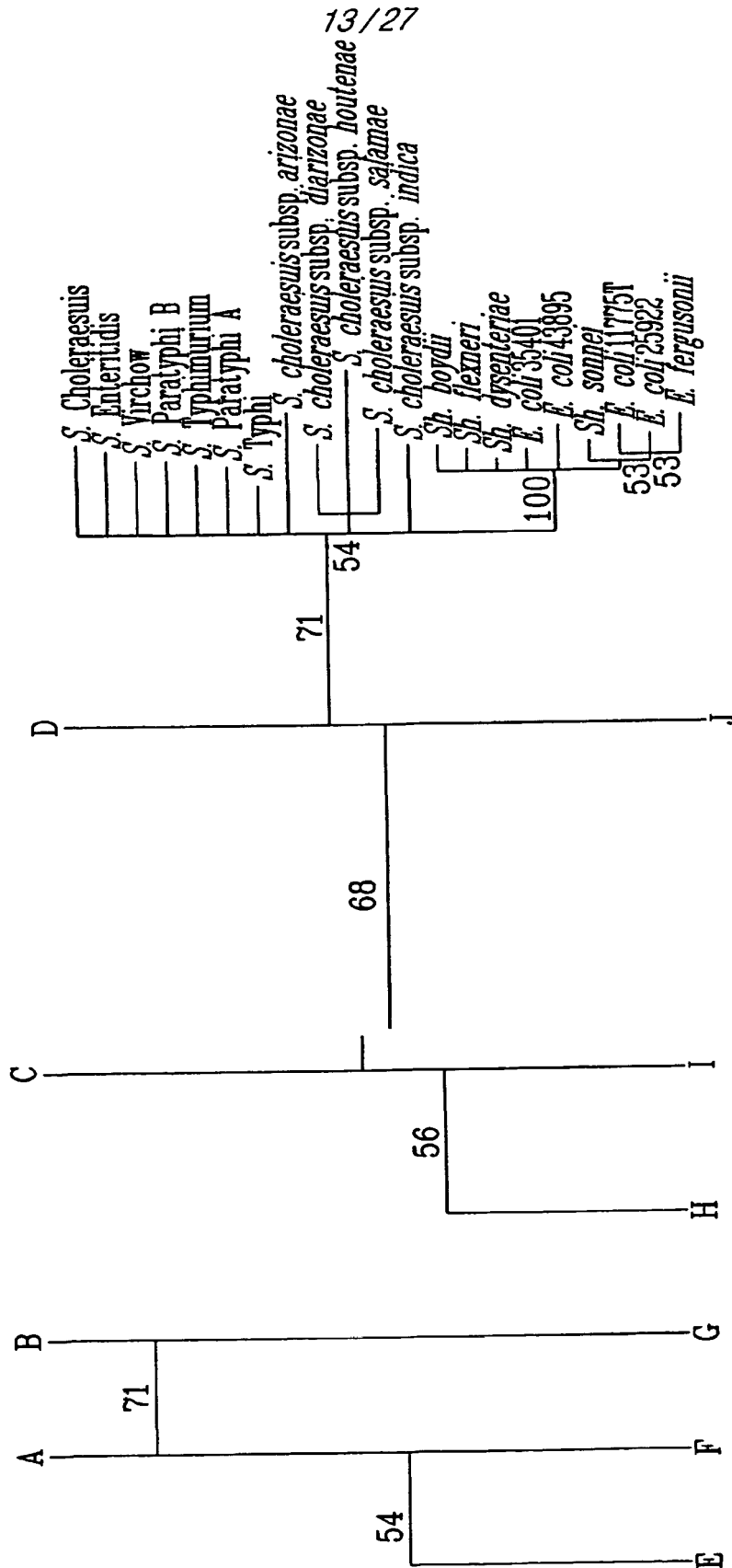


FIG. 1 - Bb

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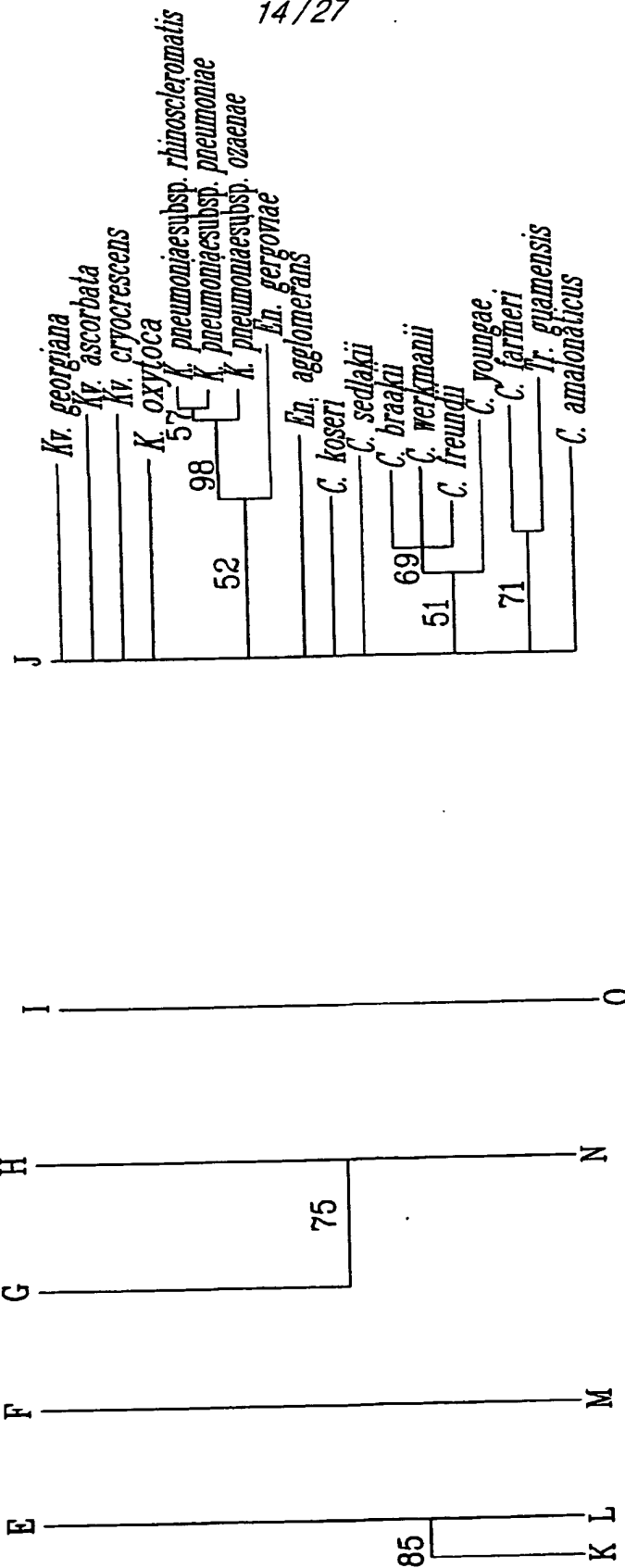


FIG. 1

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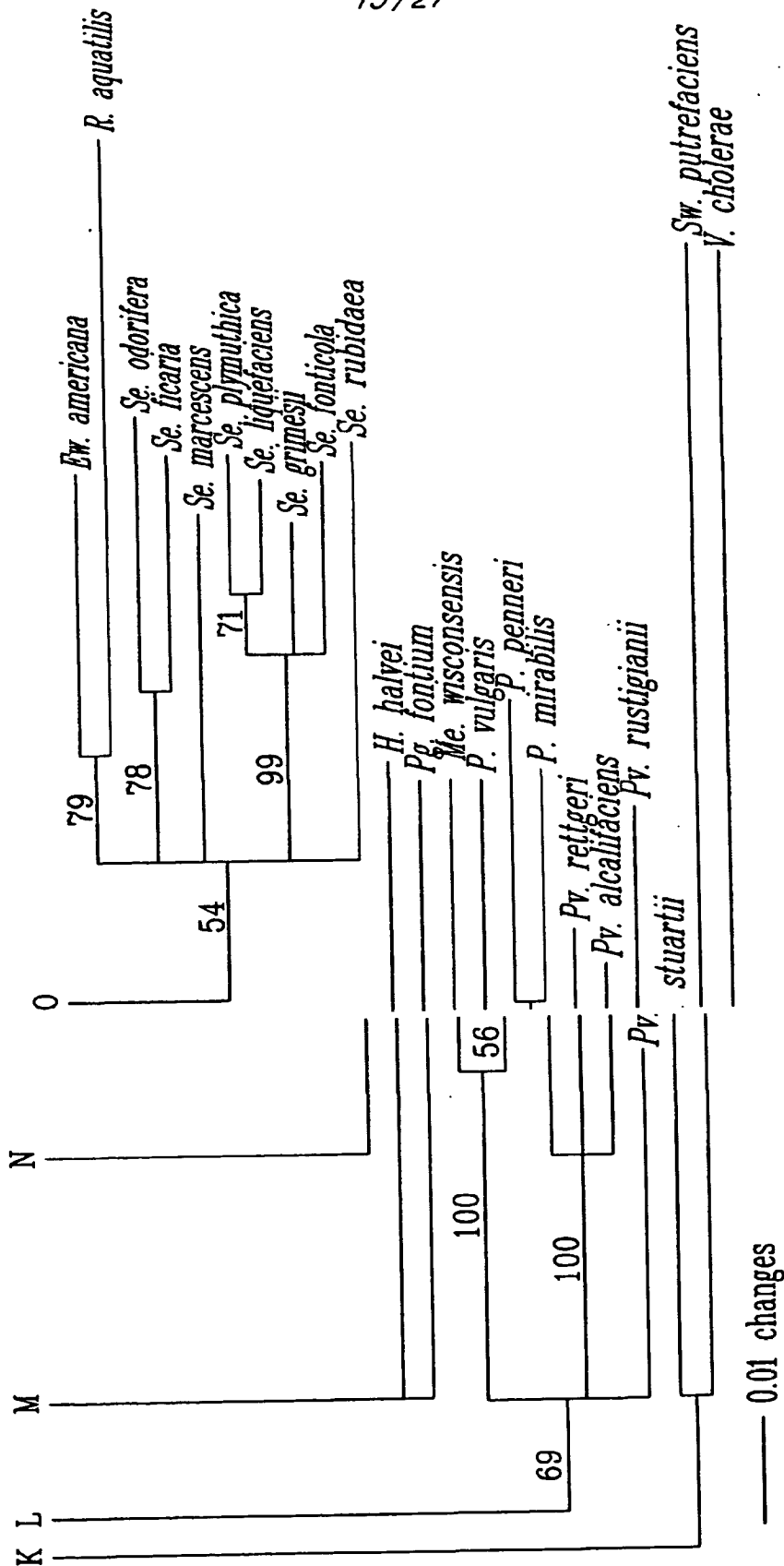
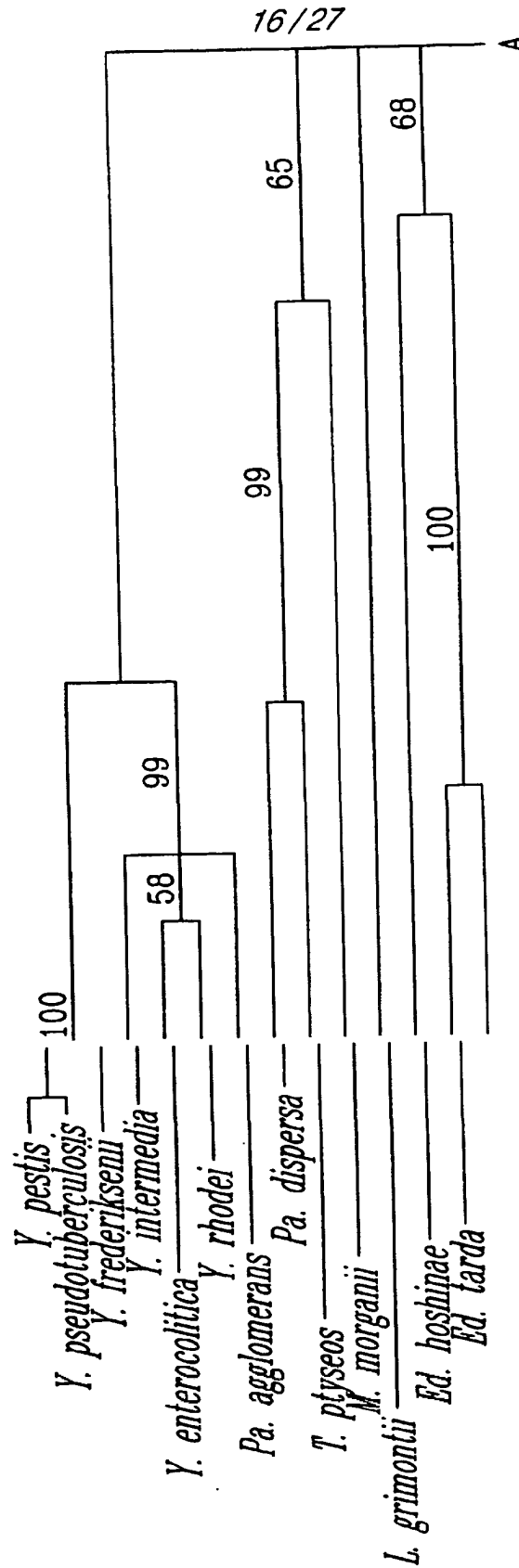


FIG. 1

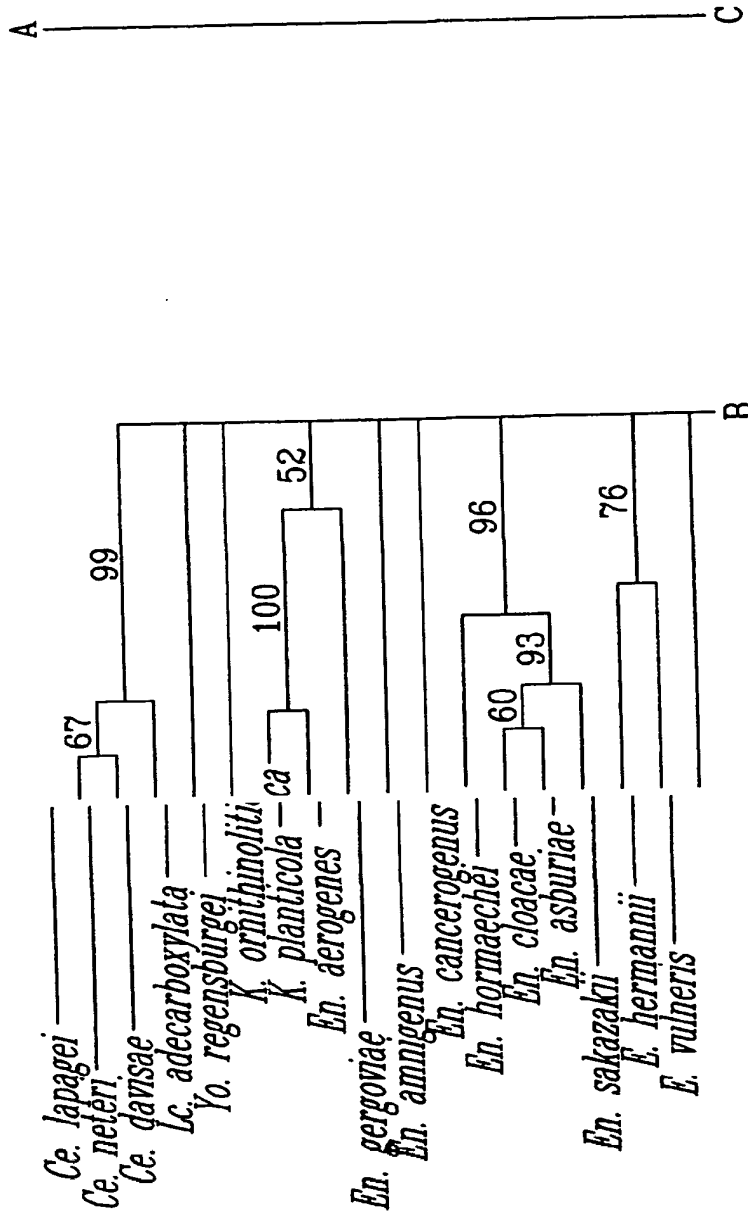
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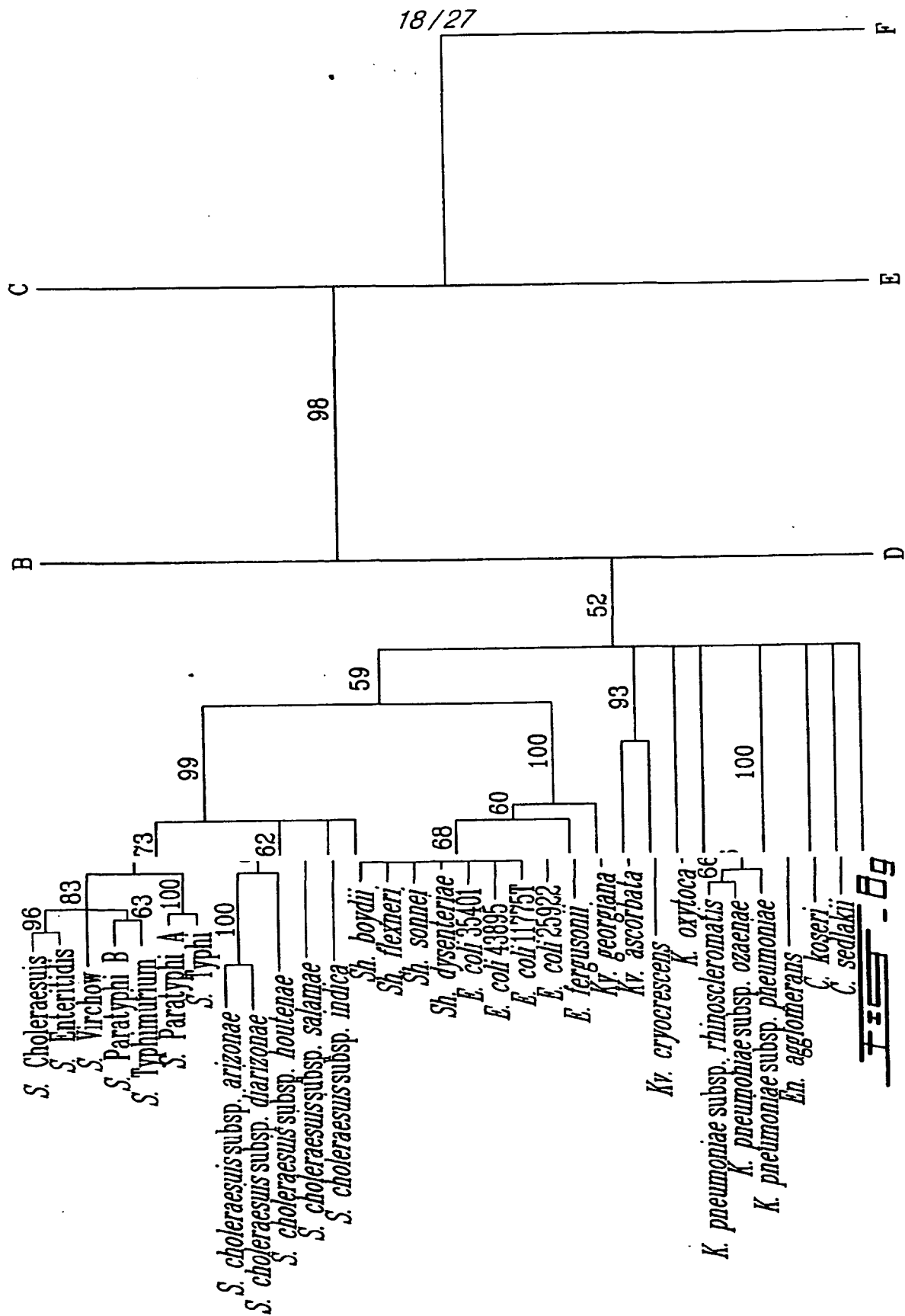
FEED - BB

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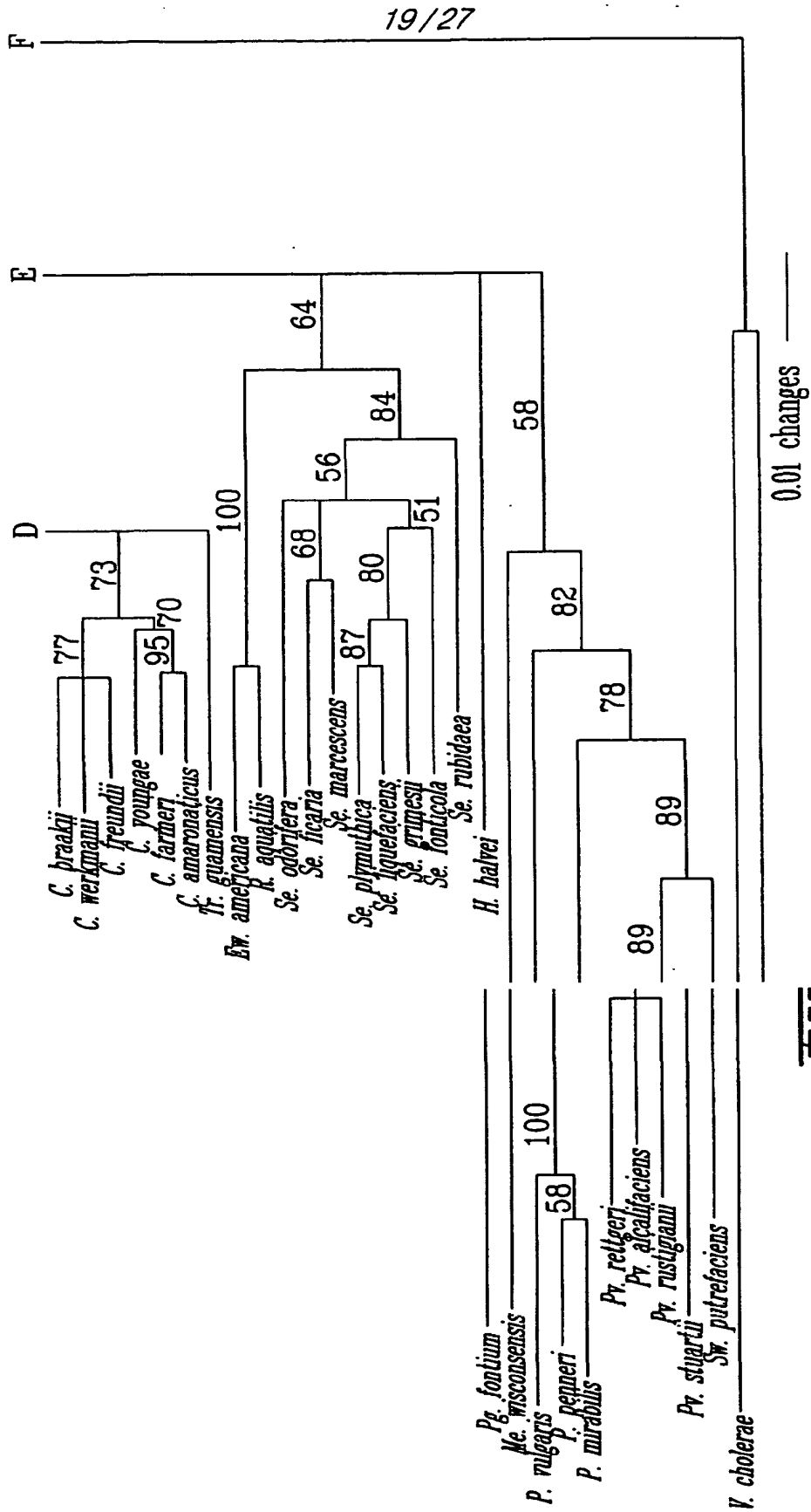
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FILE - BF



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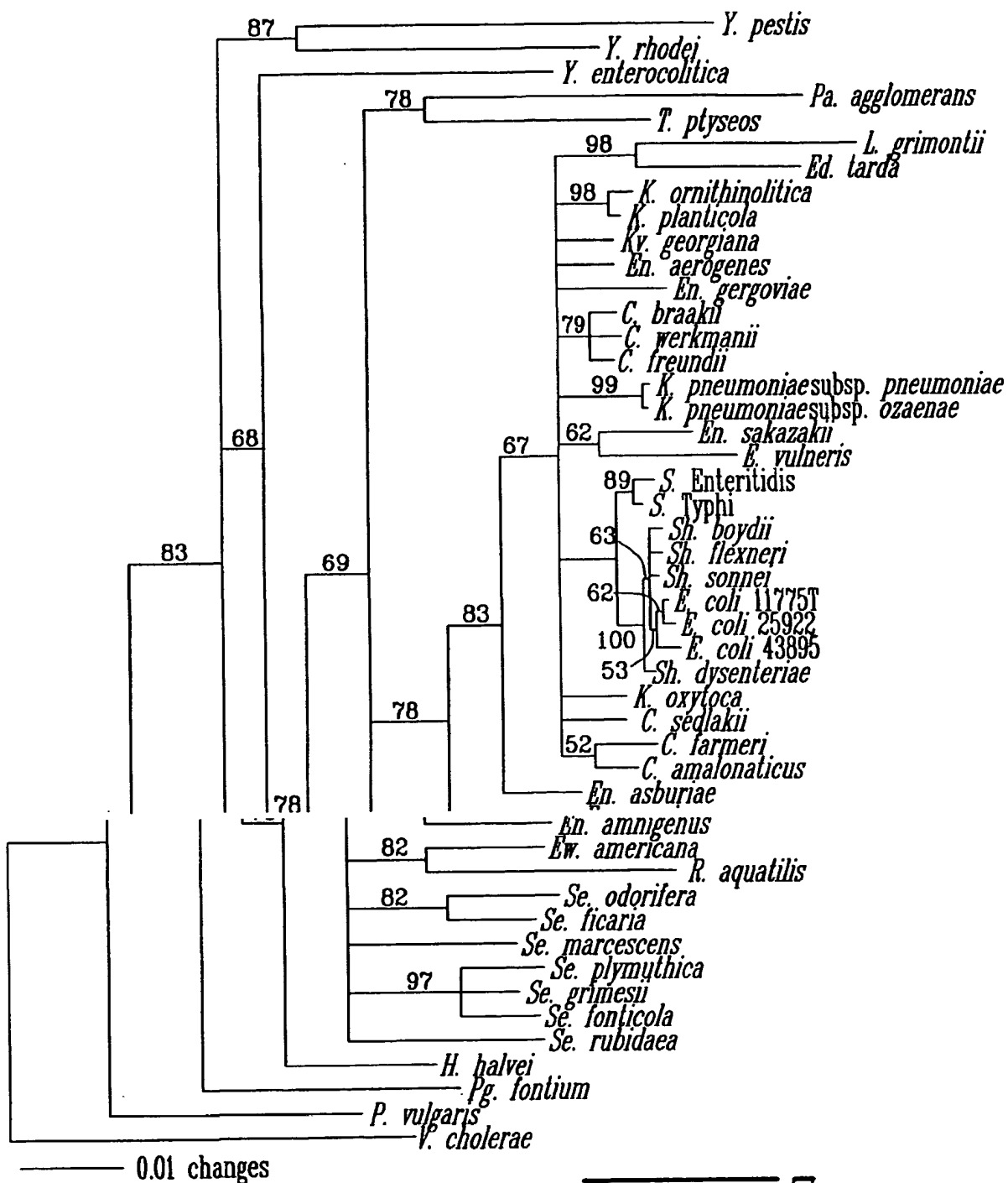
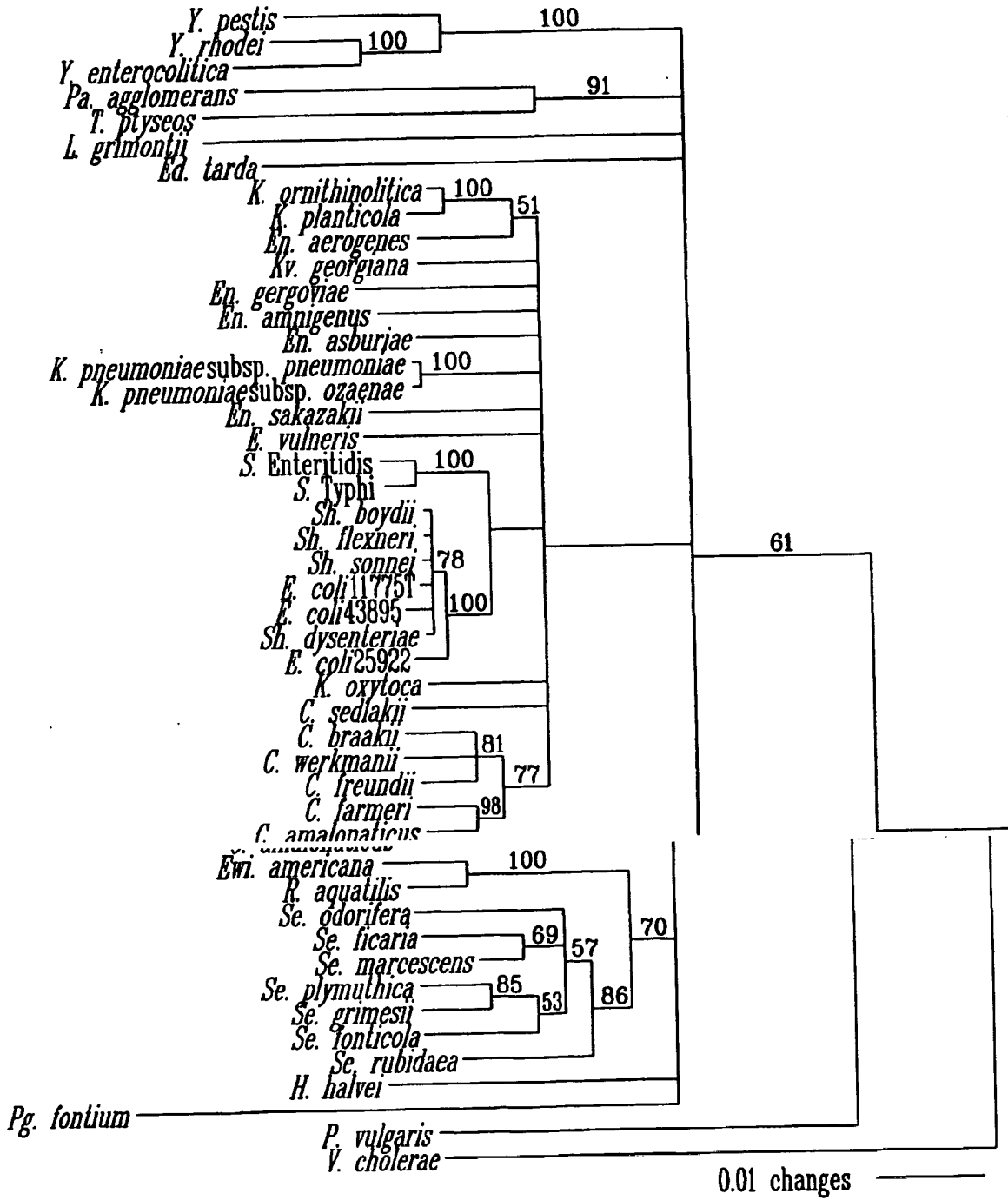


FIG. 9a

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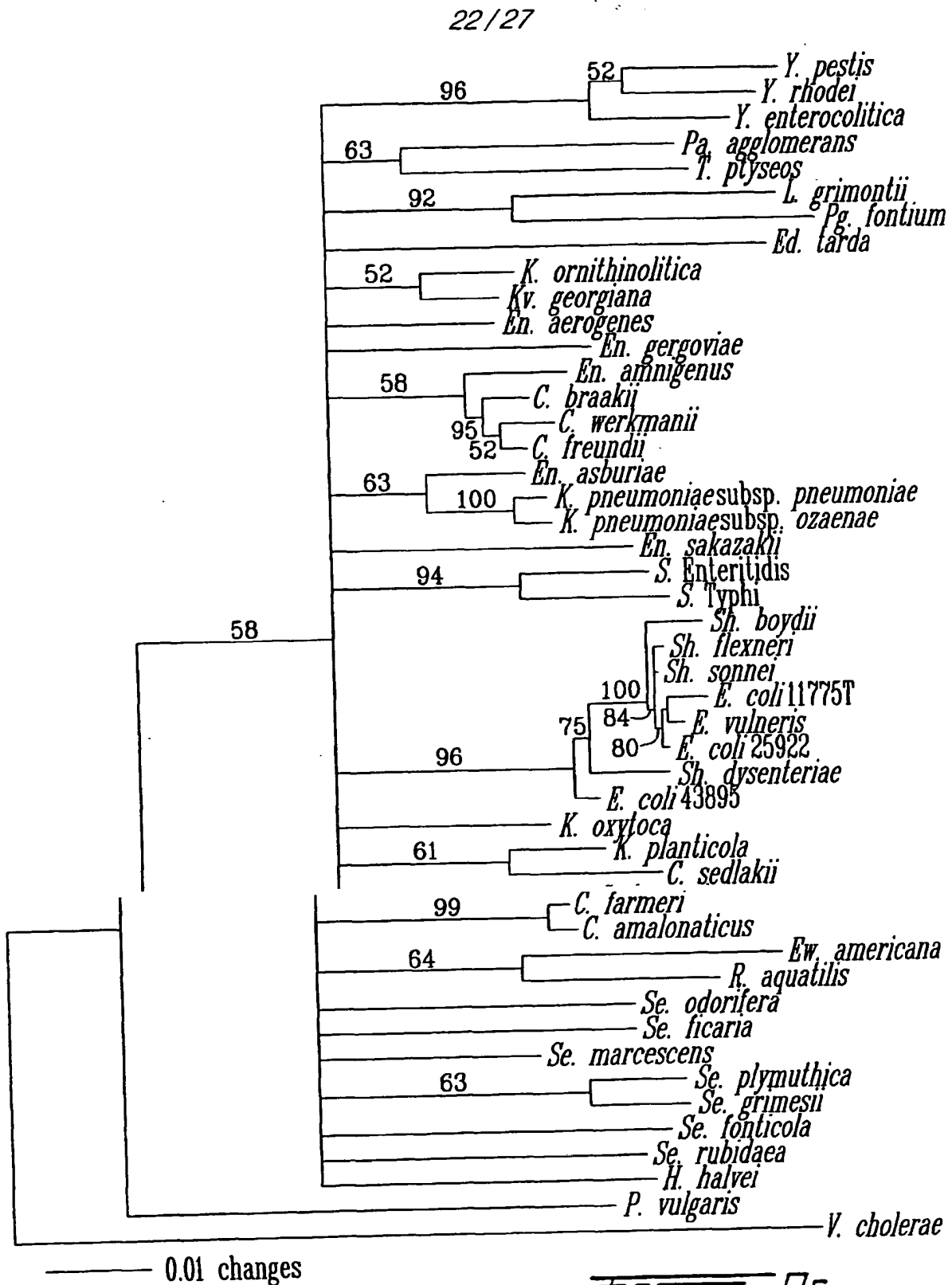


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PCT/CA00/01150

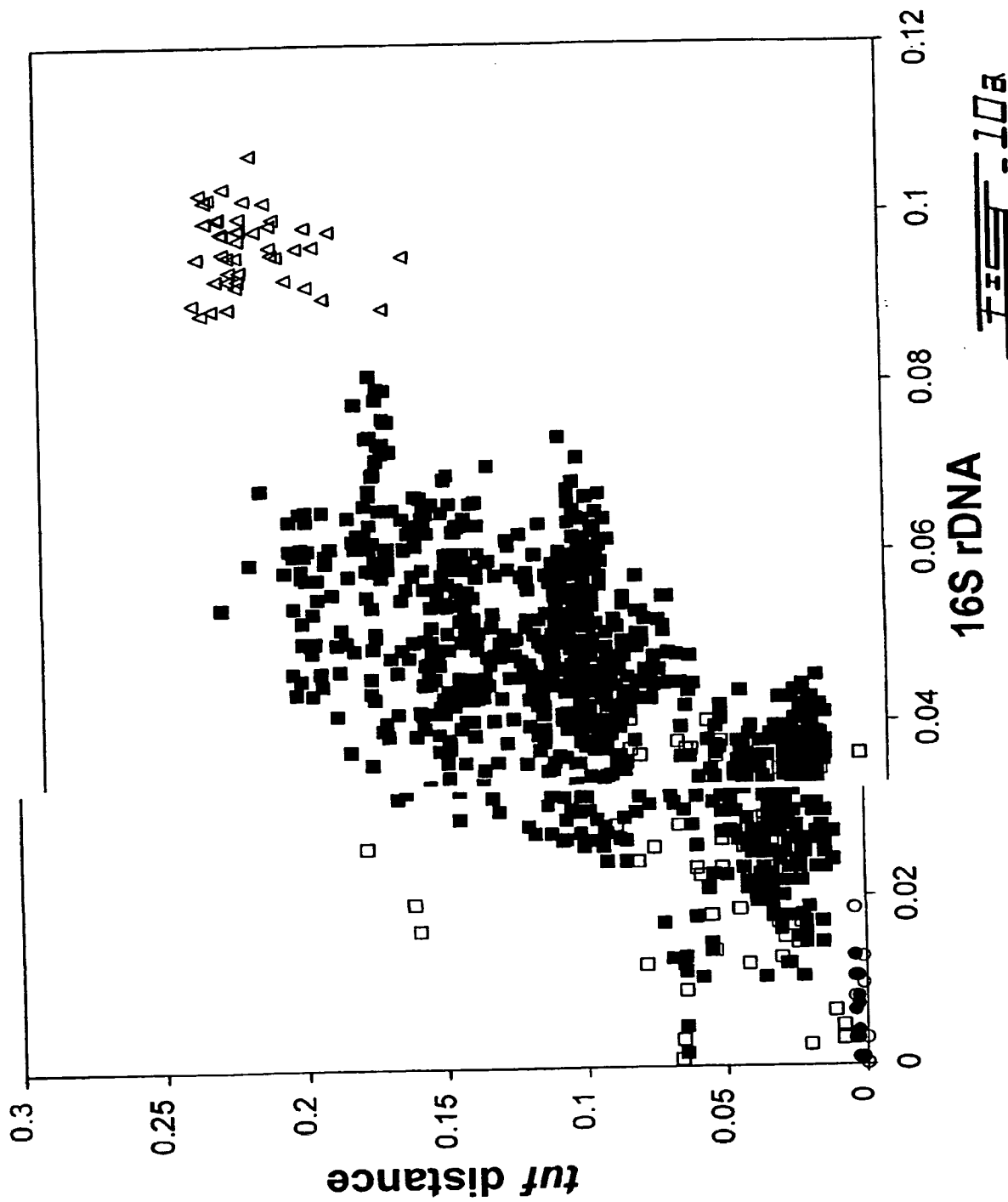


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WO 01/23604

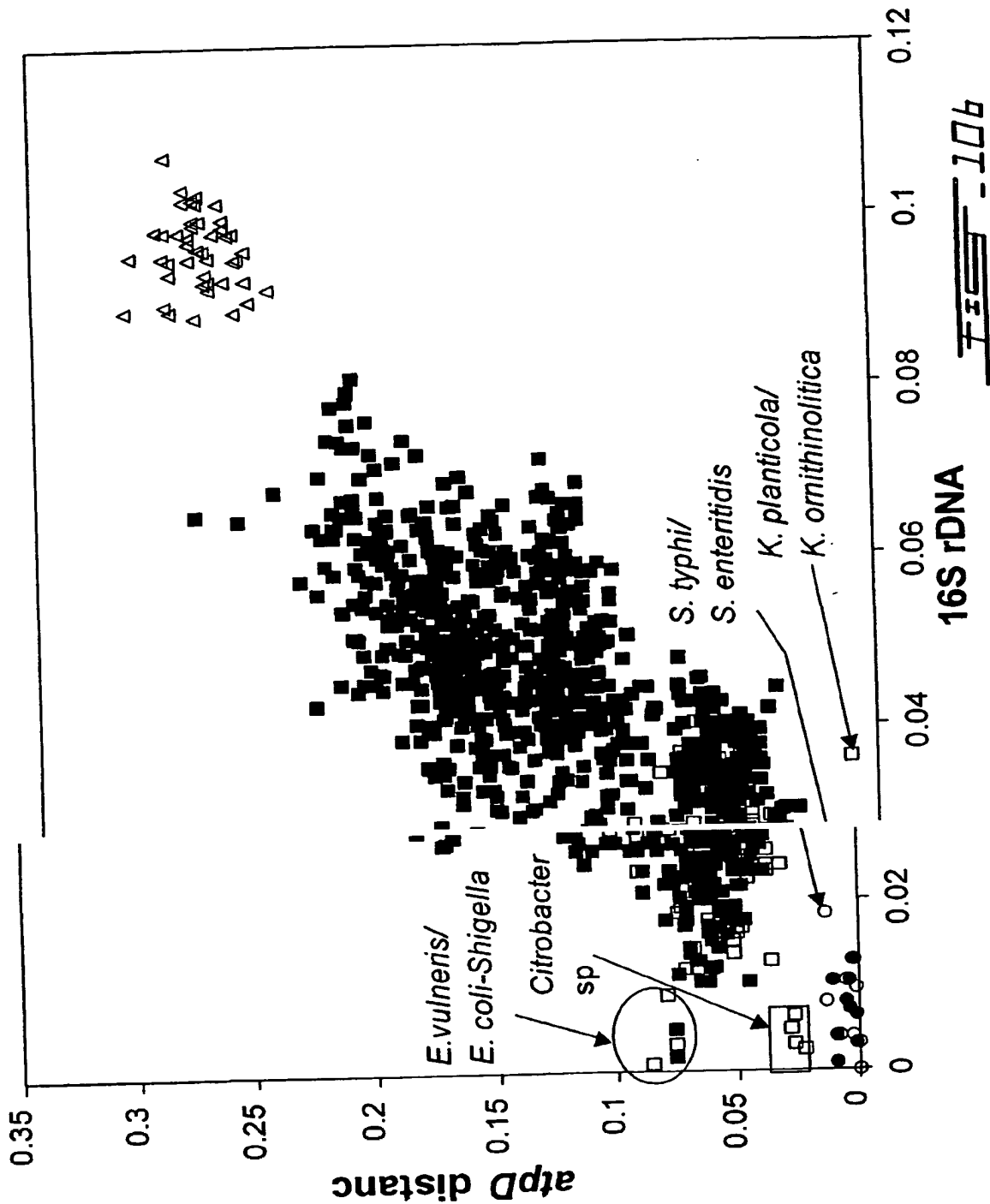
PCT/CA00/01150

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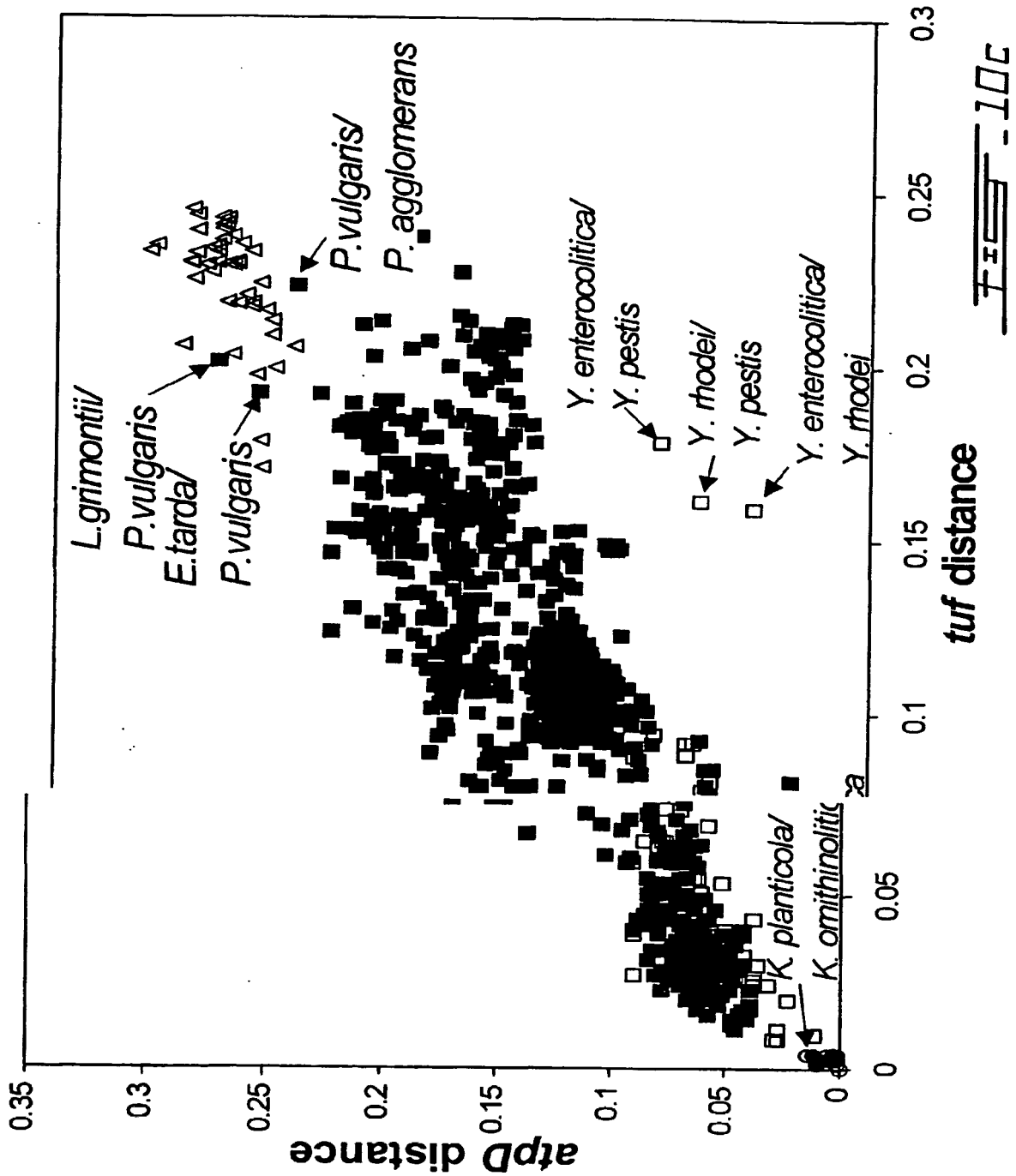
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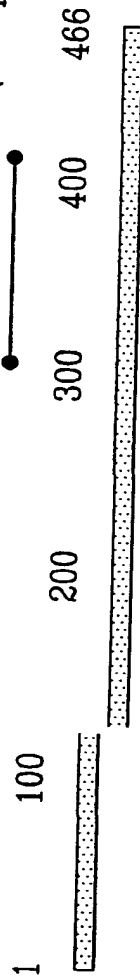
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SEQ ID NO: 118+SEQ ID NO: 119 (118 bp)



VBmcat1-VBmcat2 (93 bp)

VBmcat3-VBmcat4 (140 bp)

VBmcat5-VBmcat6 (219 bp)

VBmcat7-VBmcat8 (160 bp)

VBmcat9-VBmcat10 (167 bp)

FIG. 11

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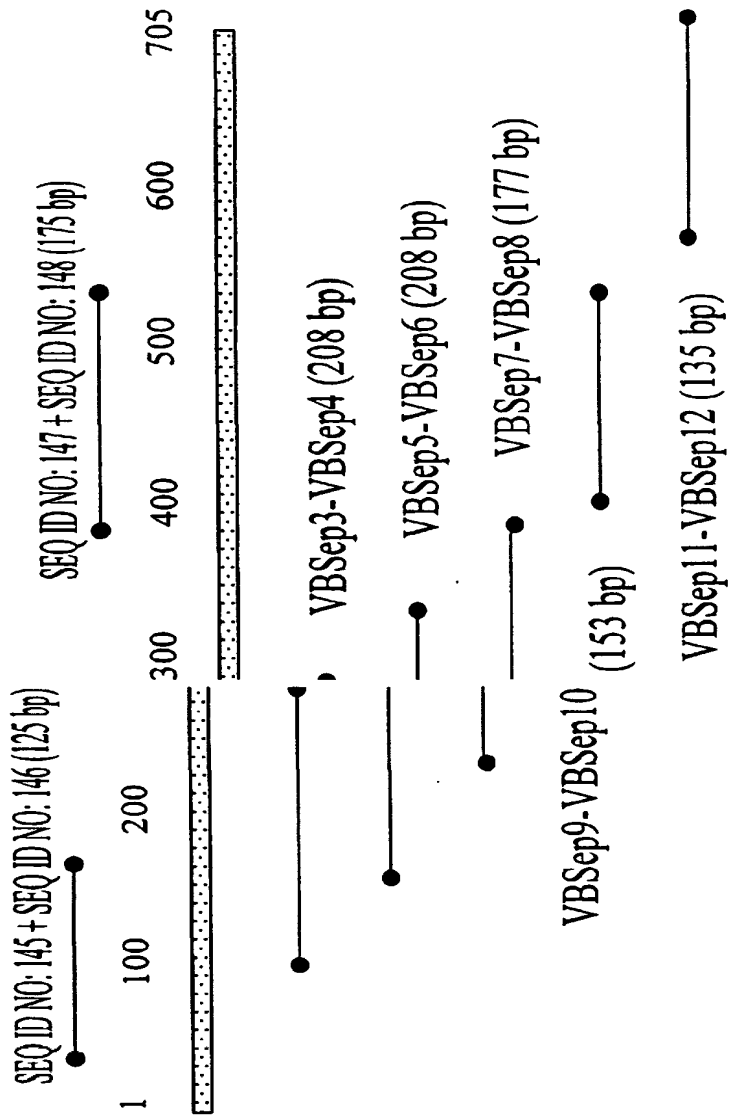


FIG. 12